ENTERED   OIPE

RAW SEQUENCE LISTING   DATE: 07/10/2002
PATENT APPLICATION: US/10/051,311A   TIME: 10:30:16

Input Set : A:\seqlist0652_2290001.txt
Output Set: N:\CRF3\07102002\J051311A.raw

```
 3 <110> APPLICANT: Boehringer Ingelheim International GmbH
 5 <120> TITLE OF INVENTION: Method for identifying compounds that modulate sister
 6       chromatid separation
 8 <130> FILE REFERENCE: 0652.2290001
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/051,311A
C--> 11 <141> CURRENT FILING DATE: 2002-06-20
13 <150> PRIOR APPLICATION NUMBER: EP 01 101 252.3
14 <151> PRIOR FILING DATE: 2001-01-19
16 <150> PRIOR APPLICATION NUMBER: US 60/297,440
17 <151> PRIOR FILING DATE: 2001-06-13
19 <160> NUMBER OF SEQ ID NOS: 13
21 <170> SOFTWARE: PatentIn Ver. 2.1
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 6668
25 <212> TYPE: DNA
26 <213> ORGANISM: Homo sapiens
28 <220> FEATURE:
29 <221> NAME/KEY: 5'UTR
30 <222> LOCATION: (1)..(144)
32 <220> FEATURE:
33 <221> NAME/KEY: CDS
34 <222> LOCATION: (145)..(6507)
36 <220> FEATURE:
37 <221> NAME/KEY: 3'UTR
38 <222> LOCATION: (6508)..(6668)
40 <400> SEQUENCE: 1
41 tcctggcgtg ggttttctcc ccgatgaaat ttctgatgtg attctttgcc tccttccacg 60
43 accttcagcc ctcttccctt cctccagtta gcttcattaa caatcttctc taattggtct 120
45 cctttttccct agctctccgg tgtc atg agg agc ttc aaa aga gtc aac ttt     171
46                           Met Arg Ser Phe Lys Arg Val Asn Phe
47                            1               5
49 ggg act ctg cta agc agc cag aag gag gct gaa gag ttg ctg ccc gac     219
50 Gly Thr Leu Leu Ser Ser Gln Lys Glu Ala Glu Glu Leu Leu Pro Asp
51  10                  15                  20                  25
53 ttg aag gag ttc ctg tcc aac cct cca gct ggt ttt ccc agc agc cga     267
54 Leu Lys Glu Phe Leu Ser Asn Pro Pro Ala Gly Phe Pro Ser Ser Arg
55                  30                  35                  40
57 tct gat gct gag agg aga caa gct tgt gat gcc atc ctg agg gct tgc     315
58 Ser Asp Ala Glu Arg Arg Gln Ala Cys Asp Ala Ile Leu Arg Ala Cys
59              45                  50                  55
61 aac cag cag ctg act gct aag cta gct tgc cct agg cat ctg ggg agc     363
62 Asn Gln Gln Leu Thr Ala Lys Leu Ala Cys Pro Arg His Leu Gly Ser
63          60                  65                  70
```

RAW SEQUENCE LISTING   DATE: 07/10/2002
PATENT APPLICATION: US/10/051,311A   TIME: 10:30:16

Input Set : A:\seqlist0652_2290001.txt
Output Set: N:\CRF3\07102002\J051311A.raw

```
65 ctg ctg gag ctg gca gag ctg gcc tgt gat ggc tac tta gtg tct acc   411
66 Leu Leu Glu Leu Ala Glu Leu Ala Cys Asp Gly Tyr Leu Val Ser Thr
67      75               80                85
70 cca cag cgt cct ccc ctc tac ctg gaa cga att ctc ttt gtc tta ctg   459
71 Pro Gln Arg Pro Pro Leu Tyr Leu Glu Arg Ile Leu Phe Val Leu Leu
72 90               95              100             105
74 cgg aat gct gct gca caa gga agc cca gag gtc aca ctc cgc ctt gct   507
75 Arg Asn Ala Ala Ala Gln Gly Ser Pro Glu Val Thr Leu Arg Leu Ala
76              110             115             120
78 cag ccc ctc cat gcc tgc ttg gtg cag tgc tct cgc gag gct gct ccc   555
79 Gln Pro Leu His Ala Cys Leu Val Gln Cys Ser Arg Glu Ala Ala Pro
80              125             130             135
82 cag gac tat gag gcc gtg gct cgg ggc agc ttt tct ctg ctt tgg aag   603
83 Gln Asp Tyr Glu Ala Val Ala Arg Gly Ser Phe Ser Leu Leu Trp Lys
84          140             145             150
86 ggg gca gaa gcc ctg ttg gaa cgg cga gct gca ttt gca gct cgg ctg   651
87 Gly Ala Glu Ala Leu Leu Glu Arg Arg Ala Ala Phe Ala Ala Arg Leu
88      155             160             165
90 aag gcc ttg agc ttc cta gta ctc ttg gag gat gaa agt acc cct tgt   699
91 Lys Ala Leu Ser Phe Leu Val Leu Leu Glu Asp Glu Ser Thr Pro Cys
92 170             175             180             185
94 gag gtt cct cac ttt gct tct cca aca gcc tgt cga gcg gta gct gcc   747
95 Glu Val Pro His Phe Ala Ser Pro Thr Ala Cys Arg Ala Val Ala Ala
96              190             195             200
98 cat cag cta ttt gat gcc agt ggc cat ggt cta aat gaa gca gat gct   795
99 His Gln Leu Phe Asp Ala Ser Gly His Gly Leu Asn Glu Ala Asp Ala
100             205             210             215
102 gat ttc cta gat gac ctg ctc tcc agg cac gtg atc aga gcc ttg gtg   843
103 Asp Phe Leu Asp Asp Leu Leu Ser Arg His Val Ile Arg Ala Leu Val
104             220             225             230
106 ggt gag aga ggg agc tct tct ggg ctt ctt tct ccc cag agg gcc ctc   891
107 Gly Glu Arg Gly Ser Ser Ser Gly Leu Leu Ser Pro Gln Arg Ala Leu
108     235             240             245
110 tgc ctc ttg gag ctc acc ttg gaa cac tgc cgt cgc ttt tgc tgg agc   939
111 Cys Leu Leu Glu Leu Thr Leu Glu His Cys Arg Arg Phe Cys Trp Ser
112 250             255             260             265
114 cgc cac cat gac aaa gcc atc agc gca gtg gag aag gct cac agt tac   987
115 Arg His His Asp Lys Ala Ile Ser Ala Val Glu Lys Ala His Ser Tyr
116             270             275             280
118 cta agg aac acc aat cta gcc cct agc ctt cag cta tgt cag ctg ggg   1035
119 Leu Arg Asn Thr Asn Leu Ala Pro Ser Leu Gln Leu Cys Gln Leu Gly
120             285             290             295
122 gtt aag ctg ctg cag gtt ggg gag gaa gga cct cag gca gtg gcc aag   1083
123 Val Lys Leu Leu Gln Val Gly Glu Glu Gly Pro Gln Ala Val Ala Lys
124             300             305             310
126 ctt ctg atc aag gca tca gct gtc ctg agc aag agt atg gag gca cca   1131
127 Leu Leu Ile Lys Ala Ser Ala Val Leu Ser Lys Ser Met Glu Ala Pro
128     315             320             325
130 tca ccc cca ctt cgg gca ttg tat gag agc tgc cag ttc ttc ctt tca   1179
```

RAW SEQUENCE LISTING   DATE: 07/10/2002
PATENT APPLICATION: US/10/051,311A   TIME: 10:30:16

Input Set : A:\seqlist0652_2290001.txt
Output Set: N:\CRF3\07102002\J051311A.raw

```
131 Ser Pro Pro Leu Arg Ala Leu Tyr Glu Ser Cys Gln Phe Phe Leu Ser
132 330                 335                 340                 345
134 ggc ctg gaa cga ggc acc aag agg cgc tat aga ctt gat gcc att ctg      1227
135 Gly Leu Glu Arg Gly Thr Lys Arg Arg Tyr Arg Leu Asp Ala Ile Leu
136                 350                 355                 360
138 agc ctc ttt gct ttt ctt gga ggg tac tgc tct ctt ctg cag cag ctg      1275
139 Ser Leu Phe Ala Phe Leu Gly Gly Tyr Cys Ser Leu Leu Gln Gln Leu
140                 365                 370                 375
142 cgg gat gat ggt gtg tat ggg ggc tcc tcc aag caa cag cag tct ttt      1323
143 Arg Asp Asp Gly Val Tyr Gly Gly Ser Ser Lys Gln Gln Gln Ser Phe
144                 380                 385                 390
146 ctt cag atg tac ttt cag gga ctt cac ctc tac act gtg gtg gtt tat      1371
147 Leu Gln Met Tyr Phe Gln Gly Leu His Leu Tyr Thr Val Val Val Tyr
148         395                 400                 405
150 gac ttt gcc caa ggc tgt cag ata gtt gat ttg gct gac ctg acc caa      1419
151 Asp Phe Ala Gln Gly Cys Gln Ile Val Asp Leu Ala Asp Leu Thr Gln
152 410                 415                 420                 425
154 cta gtg gac agt tgt aaa tct acc gtt gtc tgg atg ctg gag gcc tta      1467
155 Leu Val Asp Ser Cys Lys Ser Thr Val Val Trp Met Leu Glu Ala Leu
156                 430                 435                 440
158 gag ggc ctg tcg ggc caa gag ctg acg gac cac atg ggg atg acc gct      1515
159 Glu Gly Leu Ser Gly Gln Glu Leu Thr Asp His Met Gly Met Thr Ala
160                 445                 450                 455
162 tct tac acc agt aat ttg gcc tac agc ttc tat agt cac aag ctc tat      1563
163 Ser Tyr Thr Ser Asn Leu Ala Tyr Ser Phe Tyr Ser His Lys Leu Tyr
164                 460                 465                 470
166 gcc gag gcc tgt gcc atc tct gag ccg ctc tgt cag cac ctg ggt ttg      1611
167 Ala Glu Ala Cys Ala Ile Ser Glu Pro Leu Cys Gln His Leu Gly Leu
168         475                 480                 485
170 gtg aag cca ggc act tat ccc gag gtg cct cct gag aag ttg cac agg      1659
171 Val Lys Pro Gly Thr Tyr Pro Glu Val Pro Pro Glu Lys Leu His Arg
172 490                 495                 500                 505
174 tgc ttc cgg cta caa gta gag agt ttg aag aaa ctg ggt aaa cag gcc      1707
175 Cys Phe Arg Leu Gln Val Glu Ser Leu Lys Lys Leu Gly Lys Gln Ala
176                 510                 515                 520
178 cag ggc tgc aag atg gtg att ttg tgg ctg gca gcc ctg caa ccc tgt      1755
179 Gln Gly Cys Lys Met Val Ile Leu Trp Leu Ala Ala Leu Gln Pro Cys
180                 525                 530                 535
182 agc cct gaa cac atg gct gag cca gtc act ttc tgg gtt cgg gtc aag      1803
183 Ser Pro Glu His Met Ala Glu Pro Val Thr Phe Trp Val Arg Val Lys
184                 540                 545                 550
186 atg gat gcg gcc agg gct gga gac aag gag cta cag cta aag act ctg      1851
187 Met Asp Ala Ala Arg Ala Gly Asp Lys Glu Leu Gln Leu Lys Thr Leu
188         555                 560                 565
190 cga gac agc ctc agt ggc tgg gac ccg gag acc ctg gcc ctc ctg ctg      1899
192 Arg Asp Ser Leu Ser Gly Trp Asp Pro Glu Thr Leu Ala Leu Leu Leu
193 570                 575                 580                 585
196 agg gag gag ctg cag gcc tac aag gcg gtg cgg gcc gac act gga cag      1947
197 Arg Glu Glu Leu Gln Ala Tyr Lys Ala Val Arg Ala Asp Thr Gly Gln
```

```
198                 590                 595                 600
200 gaa cgc ttc aac atc atc tgt gac ctc ctg gag ctg agc ccc gag gag   1995
201 Glu Arg Phe Asn Ile Ile Cys Asp Leu Leu Glu Leu Ser Pro Glu Glu
202                 605                 610                 615
204 aca cca gcc ggg gcc tgg gca cga gcc acc cac ctg gta gaa ctg gct   2043
205 Thr Pro Ala Gly Ala Trp Ala Arg Ala Thr His Leu Val Glu Leu Ala
206                 620                 625                 630
208 cag gtg ctc tgc tac cac gac ttt acg cag cag acc aac tgc tct gct   2091
209 Gln Val Leu Cys Tyr His Asp Phe Thr Gln Gln Thr Asn Cys Ser Ala
210     635                 640                 645
212 ctg gat gct atc cgg gaa gcc ctg cag ctt ctg gac tct gtg agg cct   2139
213 Leu Asp Ala Ile Arg Glu Ala Leu Gln Leu Leu Asp Ser Val Arg Pro
214 650                 655                 660                 665
216 gag gcc cag gcc aga gat cag ctt ctg gac gat aaa gca cag gcc ttg   2187
217 Glu Ala Gln Ala Arg Asp Gln Leu Leu Asp Asp Lys Ala Gln Ala Leu
218                 670                 675                 680
220 ctg tgg ctt tac atc tgt act ctg gaa gcc aaa ata cag gaa ggt atc   2235
221 Leu Trp Leu Tyr Ile Cys Thr Leu Glu Ala Lys Ile Gln Glu Gly Ile
222                 685                 690                 695
224 gag cgg gat cgg aga gcc cag gcc cct ggt aac ttg gag gaa ttt gaa   2283
225 Glu Arg Asp Arg Arg Ala Gln Ala Pro Gly Asn Leu Glu Glu Phe Glu
226     700                 705                 710
228 gtc aat gac ctg aac tat gaa gat aaa ctc cag gaa gat cgt ttc cta   2331
229 Val Asn Asp Leu Asn Tyr Glu Asp Lys Leu Gln Glu Asp Arg Phe Leu
230     715                 720                 725
232 tac agt aac att gcc ttc aac ctg gct gca gat gct gct cag tcc aaa   2379
233 Tyr Ser Asn Ile Ala Phe Asn Leu Ala Ala Asp Ala Ala Gln Ser Lys
234 730                 735                 740                 745
236 tgc ctg gac caa gcc ctg gcc ctg tgg aag gag ctg ctt aca aag ggg   2427
237 Cys Leu Asp Gln Ala Leu Ala Leu Trp Lys Glu Leu Leu Thr Lys Gly
238                 750                 755                 760
240 cag gcc cca gct gta cgg tgt ctc cag cag aca gca gcc tca ctg cag   2475
241 Gln Ala Pro Ala Val Arg Cys Leu Gln Gln Thr Ala Ala Ser Leu Gln
242                 765                 770                 775
244 atc cta gca gcc ctc tac cag ctg gtg gca aag ccc atg cag gct ctg   2523
245 Ile Leu Ala Ala Leu Tyr Gln Leu Val Ala Lys Pro Met Gln Ala Leu
246     780                 785                 790
248 gag gtc ctc ctg ctg cta cgg att gtc tct gag aga ctg aag gac cac   2571
249 Glu Val Leu Leu Leu Leu Arg Ile Val Ser Glu Arg Leu Lys Asp His
250     795                 800                 805
252 tcg aag gca gct ggc tcc tcc tgc cac atc acc cag ctc ctc ctg acc   2619
253 Ser Lys Ala Ala Gly Ser Ser Cys His Ile Thr Gln Leu Leu Leu Thr
254 810                 815                 820                 825
257 ctc ggc tgt ccc agc tat gcc cag tta cac ctg gaa gag gca gca tcg   2667
258 Leu Gly Cys Pro Ser Tyr Ala Gln Leu His Leu Glu Glu Ala Ala Ser
259                 830                 835                 840
261 agc ctg aag cat ctc gat cag act act gac aca tac ctg ctc ctt tcc   2715
262 Ser Leu Lys His Leu Asp Gln Thr Thr Asp Thr Tyr Leu Leu Leu Ser
263     845                 850                 855
```

RAW SEQUENCE LISTING   DATE: 07/10/2002
PATENT APPLICATION: US/10/051,311A   TIME: 10:30:16

Input Set : A:\seqlist0652_2290001.txt
Output Set: N:\CRF3\07102002\J051311A.raw

```
265 ctg acc tgt gat ctg ctt cga agt caa ctc tac tgg act cac cag aag    2763
266 Leu Thr Cys Asp Leu Leu Arg Ser Gln Leu Tyr Trp Thr His Gln Lys
267         860                 865                 870
269 gtg acc aag ggt gtc tct ctg ctg ctg tct gtg ctt cgg gat cct gcc    2811
270 Val Thr Lys Gly Val Ser Leu Leu Leu Ser Val Leu Arg Asp Pro Ala
271     875                 880                 885
273 ctc cag aag tcc tcc aag gct tgg tac ttg ctg cgt gtc cag gtc ctg    2859
274 Leu Gln Lys Ser Ser Lys Ala Trp Tyr Leu Leu Arg Val Gln Val Leu
275 890                 895                 900                 905
277 cag ctg gtg gca gct tac ctt agc ctc ccg tca aac aac ctc tca cac    2907
278 Gln Leu Val Ala Ala Tyr Leu Ser Leu Pro Ser Asn Asn Leu Ser His
279                 910                 915                 920
281 tcc ctg tgg gag cag ctc tgt gcc caa ggc tgg cag aca cct gag ata    2955
282 Ser Leu Trp Glu Gln Leu Cys Ala Gln Gly Trp Gln Thr Pro Glu Ile
283                 925                 930                 935
285 gct ctc ata gac tcc cat aag ctc ctc cga agc atc atc ctc ctg ctg    3003
286 Ala Leu Ile Asp Ser His Lys Leu Leu Arg Ser Ile Ile Leu Leu Leu
287         940                 945                 950
289 atg ggc agt gac att ctc tca act cag aaa gca gct gtg gag aca tcg    3051
290 Met Gly Ser Asp Ile Leu Ser Thr Gln Lys Ala Ala Val Glu Thr Ser
291     955                 960                 965
293 ttt ttg gac tat ggt gaa aat ctg gta caa aaa tgg cag gtt ctt tca    3099
294 Phe Leu Asp Tyr Gly Glu Asn Leu Val Gln Lys Trp Gln Val Leu Ser
295 970                 975                 980                 985
297 gag gtg ctg agc tgc tca gag aag ctg gtc tgc cac ctg ggc cgc ctg    3147
298 Glu Val Leu Ser Cys Ser Glu Lys Leu Val Cys His Leu Gly Arg Leu
299                 990                 995                 1000
301 ggt agt gtg agt gaa gcc aag gcc ttt tgc ttg gag gcc cta aaa ctt    3195
302 Gly Ser Val Ser Glu Ala Lys Ala Phe Cys Leu Glu Ala Leu Lys Leu
303             1005                1010                1015
305 aca aca aag ctg cag ata cca cgc cag tgt gcc ctg ttc ctg gtg ctg    3243
306 Thr Thr Lys Leu Gln Ile Pro Arg Gln Cys Ala Leu Phe Leu Val Leu
307         1020                1025                1030
309 aag ggc gag ctg gag ctg gcc cgc aat gac att gat ctc tgt cag tcg    3291
310 Lys Gly Glu Leu Glu Leu Ala Arg Asn Asp Ile Asp Leu Cys Gln Ser
311     1035                1040                1045
313 gac ctg cag cag gtt ctg ttc ttg ctt gag tct tgc aca gag ttt ggt    3339
314 Asp Leu Gln Gln Val Leu Phe Leu Leu Glu Ser Cys Thr Glu Phe Gly
315 1050                1055                1060                1065
318 ggg gtg act cag cac ctg gac tct gtg aag aag gtc cac ctg cag aag    3387
319 Gly Val Thr Gln His Leu Asp Ser Val Lys Lys Val His Leu Gln Lys
320             1070                1075                1080
322 ggg aag cag cag gcc cag gtc ccc tgt cct cca cag ctc cca gag gag    3435
323 Gly Lys Gln Gln Ala Gln Val Pro Cys Pro Pro Gln Leu Pro Glu Glu
324             1085                1090                1095
326 gag ctc ttc cta aga ggc cct gct cta gag ctg gtg gcc act gtg gcc    3483
327 Glu Leu Phe Leu Arg Gly Pro Ala Leu Glu Leu Val Ala Thr Val Ala
328         1100                1105                1110
330 aag gag cct ggc ccc ata gca cct tct aca aac tcc tcc cca gtc ttg    3531
```

VERIFICATION SUMMARY   DATE: 07/10/2002
PATENT APPLICATION: **US/10/051,311A**   TIME: 10:30:17

Input Set : **A:\seqlist0652_2290001.txt**
Output Set: **N:\CRF3\07102002\J051311A.raw**

L:10 M:270 C: Current Application Number differs, Replaced Current Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:1165 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:13